Claim Amendments:

1-4. (Canceled)

5. (Currently amended) A signal distribution network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

a network interface device located at the point of entry of the building wiring that reflects network signals originating in the building wiring back into all branches of the building wiring wherein the network interface device is frequency dependent and reflects signals by reflecting a predetermined frequency band of signals;

at least one signal splitter; and

a plurality of terminal devices, wherein the signal modulation used by the terminal devices is orthogonal frequency division multiplexing.

6-9. (Canceled)

10-17. (Canceled)

18. (Currently amended) The signal distribution network of claim [[6]] 5, further comprising a method of sharing the communication medium between terminal devices using time division duplex protocol.

19-22. (Canceled)

23. (New) The signal distribution network of claim 18 wherein the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency.

24. (New) The signal distribution network of claim 18 wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency.

25. (New) A broadband local area network to enable terminal devices to transmit messages to and receive messages from other terminal devices using coaxial cable building wiring comprising a point of entry and a plurality of branches connected to terminal devices, the network comprising:

a network interface device connected to the point of entry of the building wiring comprising:

a first port connected to the point of entry side of a branch of the building wiring;

a second port connected to the terminal device side of a branch of the building wiring; and

a frequency selective signal reflecting circuit connected between the first and second port;

wherein a signal received at the second port is reflected out the second port and back into all the building wiring branches and a reflect signal path is created;

a plurality of terminal devices connected to the wiring branches, each terminal device bidirectionally communicating with other terminal devices through the reflected signal path created by the network interface device using orthogonal frequency division multiplexing (ODFM) modulation.

26. (New) The broadband local area network of claim 25 wherein the modulation order of each OFDM carrier is adjusted according to the signal to noise ratio (SNR) at each OFDM carrier frequency.

27. (New) The broadband local area network of claim 25 wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency.

28. (New) The broadband local area network of claim 25 wherein the frequency used for communicating is above the cable television band.

29. (New) A broadband local area network for transmitting modulated signals using coaxial cable building wiring containing a plurality of branches comprising:

a network interface device located at the point of entry of the building wiring that reflects network signals originating in the building wiring back into all branches of the building wiring wherein the network interface device is frequency dependent and reflects signals by reflecting a predetermined frequency band of signals;

at least one signal splitter; and

a plurality of terminal devices connected to the wiring branches, each terminal device capable of bidirectionally communicating with other terminal devices through the reflected signal path created by the network interface device, wherein the terminal devices perform equalization on the received signal.

30. (New) The network of claim 29 wherein equalization is frequency domain equalization that restores a flat frequency response to overcome multipath effects.

31. (New) The network of claim 29 wherein equalization is time domain equalization that restores a flat frequency response to overcome multipath effects.

32. (New) The network of claim 29 wherein equalization is adaptive and creates a filter response that restores a flat frequency response to overcome communication channel impairments caused by multipath signals.

33. (New) The network of claim 29 wherein the terminal devices use orthogonal frequency division multiplexing (ODFM) modulation.

34. (New) The network of claim 32 wherein the terminal devices use orthogonal frequency division multiplexing (ODFM) modulation.

35. (New) The network of claim 34 wherein the terminal devices use forward error correction to recover the transmitted signal without errors.